

## CLAIMS

Please amend the claims as indicated below.

5 1-13 (Cancelled)

14. (Currently Amended) An SPR sensor comprising:

~~— a thin conducting layer comprising at least one conductive element formed on a surface of a transparent substrate;~~

10 ~~a flow cell formed with at least one flow channel having a lumen defined by a wall a portion of which is formed by a region of the conducting layer;~~

~~a photosensitive surface that generates signals responsive to light reflected from a region of the interface between the region of the conducting layer that forms the wall portion of each of the at least one flow channel and the substrate; and~~

15 ~~an~~ An illumination system for illuminating an SPR sensor surface having formed therein a conducting layer, the illumination system comprising:

~~an array of light sources;~~

~~a collimator that directs light from each light source in a collimated beam of substantially parallel light rays so that the light is incident on the sensor surface; that enters the substrate and is incident on a region of the interface between the substrate and conducting layer region that forms the wall portion of each of the at least one flow channel; and~~

~~a light source controller controllable to turn off and turn on a light source in the array independent of the other light sources in the array.~~

25 15. (Currently Amended) An illumination system ~~SPR sensor~~ according to claim ~~13 or claim~~ 14 wherein the array is a linear array having an array axis.

16. (Currently Amended) An illumination system ~~SPR sensor~~ according to claim 15 wherein the axis of the array and a normal to the sensor surface ~~interface~~ are substantially coplanar.

30 17. (Currently Amended) An illumination system ~~SPR sensor~~ according to claim 15 wherein the axis of the array and the normal are substantially perpendicular.

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18. (Currently Amended) An illumination system~~SPR-sensor~~ according to claim 14 wherein the array is a two dimensional array.

19. (Currently Amended) An illumination system ~~SPR-sensor~~ according to claim 18 wherein the array comprises rows and columns of light sources.

20. (Currently Amended) An illumination system~~SPR-sensor~~ according to claim 19 wherein each column is substantially coplanar with a normal to the interface.

21. (Currently Amended) An illumination system ~~SPR-sensor~~ according to claim 19 or claim 20 wherein each row is substantially perpendicular to the normal.

22. (Currently Amended) An illumination system ~~SPR-sensor~~ according to any of claims claim 19-21 wherein light sources in a same column provide light at substantially same wavelengths.

23. (Currently Amended) An illumination system ~~SPR-sensor~~ according to any of claims claim 18-22 wherein all the light sources in the array provide light at substantially same wavelengths.

24. (Currently Amended) An illumination system ~~SPR-sensor~~ according to any of claims claim 19-23 wherein light sources in a same row provide light at different wavelengths.

25. (Currently Amended) An illumination system ~~SPR-sensor~~ according to any of claims claim 14-24 and comprising an optical element having two parallel surfaces through which light from each light source passes before it is incident on the ~~interface-sensor surface~~ and wherein the optical element is rotatable about an axis perpendicular to the normal so as to change an angle at which light from a given light source is incident on the ~~interface-sensor surface~~.

26-44 (Cancelled)

45. (New) An illumination system according to claim 15 wherein light from each light source in the array illuminates the sensor surface at a different incident angle.

46. (New) An illumination system according to claim 15 wherein light from each light source in the array illuminates the sensor surface at a same incident angle.
- 5    47. (New) An illumination system according to claim 14 wherein light sources in at least a subset of light sources in the array provide light at substantially same wavelengths.
48. (New) An illumination system according to claim 47 wherein light from light sources in the subset is incident on the sensor surface at substantially different incident angles.
- 10    49. (New) An illumination system according to claim 14 wherein for at least a subset of the light sources, light from each of the light sources in the subset illuminates the sensor surface at a same incident angle.
- 15    50. (New) An illumination system according to claim 49 wherein light sources in the subset provide light at different wavelengths.